UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/717,187	11/20/2000	Vikram Joshi	50277-0378	9515

29989   7590   07/02/2003

HICKMAN PALERMO TRUONG & BECKER, LLP
1600 WILLOW STREET
SAN JOSE, CA 95125

EXAMINER
VU, TUAN A

ART UNIT	PAPER NUMBER
2124	

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _20 November 2000_ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-16_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-16_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _20 November 2000_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _2_ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

1.   This action is responsive to the application filed November 20, 2000.

Claims 1-16 have been submitted for examination.

Claim Objections

2.   Claim 1 is objected to because of the following informalities: there appears to be a

missing element after the reciting of "copy of the targeted"(line 8). Examiner would interpret

this missing element as if it were - data- as in "copy of the targeted data". Appropriate

correction is required.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another
> filed in the United States before the invention by the applicant for patent or (2) a patent granted on an
> application for patent by another filed in the United States before the invention by the applicant for patent,
> except that an international application filed under the treaty defined in section 351(a) shall have the effects
> for purposes of this subsection of an application filed in the United States only if the international
> application designated the United States and was published under Article 21(2) of such treaty in the English
> language.

Note: 35 U.S.C. § 102(e), as revised by the AIPA and H.R. 2215, applies to all qualifying
references, except when the reference is a U.S. patent resulting directly or indirectly from
an international application filed before November 29, 2000. For such patents, the prior
art date is determined under 35 U.S.C. § 102(e) as it existed prior to the amendment by
the AIPA (pre-AIPA 35 U.S.C. § 102(e)).

4.   Claims 1 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Gorshkkov et

al., USPN: 6,490,721 (hereinafter Gorshkov).

As per claim 1, Gorshkov discloses debugging method comprising:

preserving a memory state of a preserved portion of a first software program (e.g. *fork* -- col. 3, lines 54-60 – Note: forking a child is equivalent to preserving a parent program, or first program);

dynamically linking a second software program to the first program without de-allocating the first program from volatile memory (e.g. step *10* – Fig. 2; col. 4, lines 29-33 — Note: the linking of the child to the target user program being a copy of the parent is equivalent to linking second program to first);

executing the second program (e.g. step *12* – Fig. 2; Fig. 4), the second program when executing would cause modifications to the targeted data of the preserved portion of the first software program (e.g. steps *21, 30* -- Fig. 4 – Note: child executing a patch call on the copy of the parent is equivalent to second program would otherwise cause modifications to the preserved portion of the parent); and

making copy of such targeted data (e.g. step *6* – Fig. 2 – Note: the to-be-modified areas of parent code being duplicated in child is equivalent to making copy of targeted area) and modifying the copy to generate a modified copy of the targeted data without modifying the targeted data preserved in the first software program (e.g Fig. 2, 4).

As per claim 9, this is the computer medium version of claim 1 above, hence is rejected herein using claim 1 rejection; further using the disclosure by Gorshkov (col. 5, lines 14-23) to address the computer-readable medium.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 2, 5-8, 10, and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Gorshkkov et al., USPN: 6,490,721 as applied to claims 1, 9 above, in view of Martin et al.,

USPN: 6,029,178 (hereinafter Martin) and further in view of Nixon et al., USPubN:

2003/0004952 (hereinafter Nixon).

As per claim 2, Gorshkov does not disclose publishing the preserved portion of the first

program with a symbolic name associated it with the second program; nor does Gorshkov

disclose accessing the second program by multiple users via the symbolic name. Gorshkov,

however discloses the contention due to multiple users trying to modify code for bugs and the

desirability to accomplish such code change in a efficient and more controlled manner (e.g. col.

1, lines 27-47). A desired resolution to synchronizing multiple and simultaneous changes

applied to a persistent storage or shared source of data as suggested by Gorshkov is evidenced by

Martin. Martin, in an system purported to efficiently propagate source code changes (e.g. col. 3,

line 51 to col. 4, line 61) to a persistent database, discloses data upgrade via replication of

repository data (similar to Gorshkov's patch to a copy) to provide synergic loading of data and

propagation of data up to the persistent source(e.g. col. 12, lines 54-65; Figs. 5, 25-26); as well

as informing of changes by pointing to latest loaded structure (e.g. Fig. 23a-b; col. 24, lines 21-

64). Such concomitance of data being updated via multiple users as mentioned by Martin is

further evidenced by the timely publishing of such changes via communications channels as

suggested by Nixon. Nixon, in a system to update configuration database in a distributed control

process wherein updated information publication needs to be addressed as expediently as

suggested by Gorshkov and Martin, discloses online notifications or link displays for users not to access old versions or to be directed to sites of latest versions of database(e.g. cols. 13-14, paragraphs 0085-0088), thus suggesting using of symbolic reference to direct to portions of data changed as claimed. In view of the teachings by Nixon to complement the suggested database propagation via replication techniques by Martin and the desirability to provide fast and controlled upgrade by Gorshkov, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the users with publishing means which would enable user access to the second program the corresponding preserved portions in the first program, i.e. using the technique suggested by Martin and Nixon to link users to the latest representation of the recently updated source data because this would enable up-to-date data access by users, thereby avoiding memory reference fault through misdirected retrieval/read of obsolete or non-existent data.

As per claim 5, this limitation would have been obvious by virtue of the combined teachings by Gorshkov, Martin and Nixon using the rationale from claim 2 above because the preserved portion of the targeted data has now been redirected via a symbolic reference to the updated portions applied to the copy of such targeted data.

As per claim 6, this limitation would have been obvious by virtue of the combined teachings by Gorshkov, Martin and Nixon above because the process of dynamically linking by Gorshkov is further enhanced to become a dynamic database persisting via replication and the teachings by Nixon/Martin would have combined to render the subsequent access by an user limitation obvious as per the same rationale used in claim 2 above.

As per claim 7, Gorshkov discloses dynamic linking and executing of the second software program by an user (e.g. col. 4, lines 29-33; step *12* – Fig. 2; Fig. 4); a first modified copy of the targeted data (e.g. step *6* – Fig. 2). But Gorshkov does not specify the steps of executing an operation that would cause modification, performing such operation by making a second copy and modifying a second copy being separate from a first modified copy; nor does Gorshkov disclose that the first modified copy has been linked and executed by a first user.

But by virtue of the combined teachings by Gorshkov, Martin, and Nixon, these steps limitations to link to execute the second software, to generate a modified copy by a first user; then repeat the process by creating a modified second copy by another user would have been obvious because of the desired intent by Martin and Nixon not to allow users to access undesired or obsolete/unallocated areas of the data stored, thus creating for each user an instance (e.g. online session by Nixon – re claim 2) which would direct him/her to an instance of claimed/appropriate areas of the latest modified target code; and that the propagation of the data changes should be available to all users as intended by Martin (re claim 2), with the repeated scenario of informing each user with a reference to the latest portion of data to start the modification with.

As per claim 8, the steps as claimed performed by a third user would have been obvious in view of the rationale used to reject claim 7; hence are rejected herein using the same ground of rejection used in claim 7 above.

As per claim 10, this is the computer medium version of claim 2 above, hence is rejected herein using claim 2 rejection.

As per claims 13-16, these claims correspond to claims 5-8, respectively, hence incorporate each the corresponding rejection as set forth therein.

7.   Claims 3, 4 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorshkkov et al., USPN: 6,490,721 as applied to claims 1, 9 above, in view of Martin et al., USPN: 6,029,178.   ·

As per claim 3, the database limitation would have been obvious in view of the combined teachings by Gorshkov and Martin as mentioned in claim 2, and one of ordinary skill in the art at the time the invention was made would be motivated to modify the source code (first program) to upgrade by Gorshkov to make it a database system because both Gorshkov and Martin desire to resolve multiple upgrade to the data source and expediently propagate the changes to provide persistency to the common source while providing fault-free up-to-date data use, using the upgrade technique applied to a copy such as suggested by Martin.

As per claim 4, Gorshkov does not teach a database system; but this limitation has been addressed in claim 3 above and would have been obvious herein for the same rationale. On the ground that Martin combined with Gorshkov teach about a database being updated, Gorshkov further discloses preserving of the memory state of the preserved portion of the first program (e.g. steps 22-24 – Fig. 4; steps 35-37 – Fig. 5 – Note: the context switching applied to child code being a copy of the first program is equivalent to saving state of the first program, and the need to upgrade or patch is implicitly teaching that a portion in a database application has failed).

As per claims 11-12, these claims correspond to claims 3-4, respectively, hence incorporate each the corresponding rejection as set forth therein.

Conclusion

8.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

> U.S. Pat No. 5,675,803 to Preisler et al., disclosing dynamic linking and patch without recompiling.
>
> U.S. Pat No. 6,374,268 to Testardi, disclosing upgrading using delta file and session use of copy.
>
> U.S. Pat No. 6,112,025 to Mulchandani et al., disclosing dynamic loading of Java classes by compiler.
>
> U.S. Pat No. 5,946,689 to Yanaka et al., disclosing attributes for database replication and data identification
>
> U.S. Pat No. 6,397,125 to Goldring et al., disclosing design schema and target schema comparing with replicas.
>
> U.S. Pat No. 5,950,198 to Falls et al., disclosing key to represent file version or file portion for upgrade.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tuan A Vu whose telephone number is (703)305-7207. The

examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kakali Chaki can be reached on (703)305-9662.

Any response to this action should be mailed to:
            Commissioner of Patents and Trademarks
            Washington, D.C. 20231
or faxed to:
            (703) 746-7239, (for formal communications intended for entry)
or: (703) 746-7240 (for informal or draft communications, please label
            "PROPOSED" or "DRAFT")
            Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal
Drive, Arlington. VA. , 22202. 4th Floor(Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

VAT
June 23, 2003